

AMENDMENTS TO THE CLAIMS

1. (Original) A method of detecting a post-translational modification of a predetermined protein expressed by a cell, comprising the step of: specifically detecting an O-sulfonation of a serine or threonine residue of the protein.

2. (Original) The method of claim 1, wherein the detected O-sulfonation is detected under a first physiological condition, and is compared with a control O-sulfonation detected under a second physiological condition.

3-10. (Cancelled)

11. (new) The method of claim 1 wherein the O-sulfonation is detected using a specific antibody.

12. (new) The method of claim 1 wherein the O-sulfonation is detected using chemical analysis.

13. (new) The method of claim 1 wherein the O-sulfonation is detected using radiolabeling with $^{35}\text{SO}_4$.

14. (new) The method of claim 1 wherein the O-sulfonation is detected using mass fragmentation analysis by mass spectrometry.